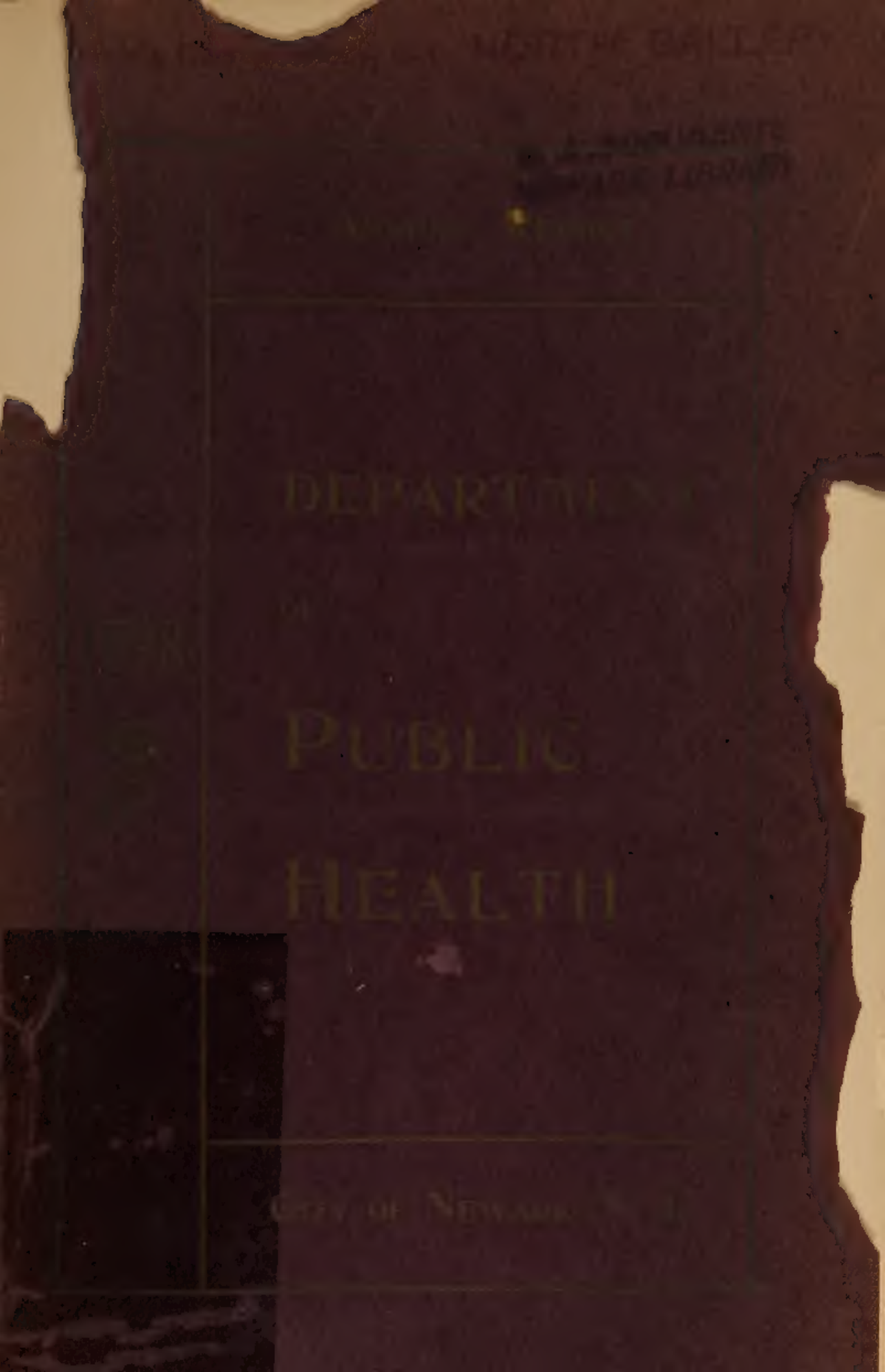




COMPLIMENTS OF

DAVID D. CHANDLER,

HEALTH OFFICER.

ANNUAL REPORT.

Department of Public Health.

CITY OF NEWARK, N. J.,

1898.

NEWARK, N. J.:
GROVER BROS., PRINTERS,
No. 764 BROAD STREET.

1899.

INDEX.

	PAGE.
Members of Board of Health	3
Standing Committees	4
Employees	5-6-7
District Physicians	8
Antitoxin Stations	9
Health Officer's Report	13
Receipts and Disbursements	29
Report on Typhoid Fever and Charts	35
Bureau of Contagious Diseases	41
Bacteriological Report	51
Chemist's Report	91
Births	114
Marriages	115
Nativity of Decedents	116
Deaths in Institutions	117
Wells	118
Meteorological Report	121
Area of City and Public Improvements	128

BOARD OF HEALTH.

DR. H. C. H. HEROLD, PRESIDENT,	75 Congress Street
MR. M. STRAUS,	1085 Broad Street
MR. A. H. JOHNSON,	1000 Broad Street
MR. J. A. FURMAN,	65 South Tenth Street
MR. MATTHEW T. GAY,	47 Lincoln Avenue
DR. C. M. ZEH,	481 Broad Street
DR. D. L. WALLACE,	192 Clinton Avenue
DR. F. W. BECKER,	130 Belmont Avenue
DR. W. S. DISBROW,	151 Orchard Street
MR. HUGH SMITH,	36 Central Avenue

HEALTH OFFICER.

MR. DAVID D. CHANDLER,	74 North Seventh Street

Standing Committees of the Board of Health

FOR THE YEAR 1898.

SANITATION.

Dr. Disbrow, Dr. Becker, Dr. Zeh
Mr. Johnson, Mr. Furman.

FINANCE.

Mr. Straus, Mr. Gay, Dr. Disbrow

CITY HOSPITAL.

Dr. Zeh, Mr. Furman, Mr. Johnson
Dr. Wallace, Mr. Straus.

LAWS AND ORDINANCES.

Mr. Gay, Mr. Smith, Mr. Furman

RULES.

Mr. Smith, Mr. Gay, Dr. Becker

APPOINTMENTS.

Mr. Johnson, Mr. Furman, Dr. Wallace

SUPPLIES.

Dr. Becker, Mr. Gay, Dr. Disbrow

TRAINING SCHOOL.

Dr. Wallace, Dr. Zeh, Dr. Herold

MEETINGS.

The regular meetings of the Board are held on the first and third Tuesdays of each month, at 8.30 P. M. The meeting on the first Tuesday shall be held for the transaction of all business pertaining to the Sanitary Department. The meeting on the third Tuesday shall be held for the transaction of all business pertaining to the Newark City Hospital.

The regular meetings of the Sanitary Committee will be held on the Thursday preceding the first Tuesday of each month, at 8.30 P. M

EMPLOYEES of the BOARD of HEALTH.

OFFICE DIVISION.

JOHN J. GREENE, - - *Clerk Bureau of Contagious Diseases*
No. 63 Newton Street.

EUGENE W. BELLAR, - - - - *Clerk Sanitary Division*
No. 45 Congress Street.

MARIE PERIER, - - - - *Stenographer to Health Officer*
No. 372 High Street.

EDWARD E WORL, M. D., *Supt. Bureau of Contagious Diseases*
No. 271 High Street.

HERBERT B BALDWIN, - - *Chemist*
No. 906 Broad Street

GEORGE C. SONN, - - - - - - *Meterologist*
No. 285 Belleville Avenue

BACTERIOLOGICAL DIVISION.

DR. R. N. CONNOLLY, *Bacteriologist*, - - - City Hospital
DR. J C. HOUSTON, *Assistant Bacteriologist*, 111 Bloomfield Avenue
ADOLPH ROLIXMANN, *Porter*, - - 25 South Seventh Street
HERMAN VOLK, *Culture Collector*, - 108 McWhorter Street

CITY DISPENSARY.

WILLIAM A. SMITH, *Apothecary*, - - 1 Sherman Avenue
JAMES CASE, *Assistant Apothecary*, - - - 19 Plum Street
WILLIAM M. GOULD, *Dentist*, - - 89 Halsey Street

DISTRICT PHYSICIANS.

WILLIAM SCHOPFER, - - - - 43 Read Street
HERBERT W. LONG, - - - 119 Madison Street
WILLIAM M. GOODWIN, - - - - 64 Congress Street
MATTHEW T. GAFFNEY, - - 211 Plane Street
M. LOUISE LEFORT - - - 300 Washington Street
FREDK. WEBNER, - - - 3 Belmont Avenue
VINCENT NAGER, - - - - 23 Beacon Street
WILLIAM GAUCH, - - 294 Orange Street
CHARLES W. TITUS, - - - 126 North Seventh Street
HUGH M HART, - - 274 Broad Street
FRED. HAGNEY, - - - 31 Milford Avenue

Bureau of Bacteriology and Pathology.

CITY HOSPITAL, NEWARK, N. J.

Telephone No. 168.

It is the earnest desire of the Board of Health that the service in the bacteriological diagnosis of Diphtheria be made as perfect and useful to physicians as possible. Whenever the bacteriological diagnosis does not harmonize with the clinical facts and the history of the case, and where there are any defects or reasons for complaint regarding the service in any respect, physicians are earnestly requested to report them promptly to the Chief of the Bureau. The service can only thus be improved and perfected. The following is a list of the stations where culture outfits, anti-toxine and sputum jars may be obtained. Collections are made from the stations daily at 5 P. M.

M. BRAMLEY,	112 Union Street
F. W. RODEMAN,	77 Ferry Street
F. BRUGUIER,	70 Hamburg Place
REICHLE & GRUSENBACK,	28 Bowery Street
C. HOLZHAUER,	787 Broad Street
E. R. PETTY,	925 Broad Street
LINNETT BROS.,	77 Lincoln Park
GREENLEE, L. D.	Central Avenue and Broad Street
H. S. JACKSON,	482 Broad Street
W. R. SCUDDER,	91 Belleville Avenue
A. SCHURR,	289 Belleville Avenue
J. BEIZLER,	503 Orange Street
AVERY & CO.,	291 Central Avenue
C. P. MOLL,	Summit Street and Central Avenue
D. GOLDSTICKER,	51 South Orange Avenue
RICHARD STAEHLER,	Broome Street and Springfield Avenue
M. PALIS,	121 Belmont Avenue
E. REICHLE,	362 Springfield Avenue
C. HITCHCOCK,	315 South Orange Avenue
BOARD OF HEALTH,	843 Broad Street
PETTY'S	Prudential Building

SANITARY DIVISION—Meat Inspectors

WERNER RUNGE,	130 Union Street
CHARLES WOLZ,	81 Ferry Street

PLUMBING INSPECTORS.

JOHN B. SULLIVAN,	204 Second Street
WILLIAM H GRIER,	37½ Third Street
HENRY W. SCHROEDER,	187 Bank Street

MILK INSPECTOR.

WILLIAM H. LYLE,	63 Newton Street

SANITARY INSPECTORS.

THOMAS E. FREEMAN,	42 Crawford Street
LOUIS H. BRIDGEM,	59 Court Street
WILLIAM H. YOUNG,	179 Thirteenth Avenue
ANDREW J. BRADY,	115 William Street
JOHN WRIGHT,	70 Arlington Street
THOMAS F. NEWTON,	141 Clifton Avenue
MORRIS SEIDL,	411 South Eighth Street
FORMAN J. REYNOLDS	429 High Street
OTTO B. SCHALK,	407 Bergen Street
CHAS. E. BURKE,	125 Union Street
BERNARD CAHILL,	311 Warren Street
HERBERT O'ROURKE,	
MICHAEL HELMSTAEDTER,	335 Mulberry Street
RICHARD J. CORBLEY,	29 Providence Street
CHRISTOPHER GELANTO,	River Street

DISINFECTING CORPS

SAMUEL KNOTT, *Chief*,	279 Plane Street
JOHN L. BALL,	45 Nichols Street
WILLIAM PARKER,	233 Academy Street
HIRAM R. STEWART,	66 Thomas Street
LEONARD GILLEN,	126 Halsey Street

FRANK FEIRIDGE, *Orderly at Isolation Hospital*
Sherman Avenue and Concord Street

MARY SCHAFER, *Janitress*
No. 34 Mulberry Place.

DISTRICT PHYSICIANS, 1898.

1st DISTRICT — Dr. W. SCHOPFER.—District Lines: Polk Street, Lafayette Street, Hamburg Place, Thomas Street and Passaic River.

2d DISTRICT.—Dr. H. W. LONG.—District Lines: Polk Street, Lafayette Street, Hamburg Place, Thomas Street, Newark Bay, City Line, Avenue D, Pacific Street, Clifford Street, Jefferson Street and Passaic River.

3d DISTRICT — Dr. W. M. GOODWIN.—District Lines: Jefferson Street, Clifford Street, Pacific Street, Tichenor Street, Broad Street, Market Street, Railroad Place and Passaic River.

4th DISTRICT.—Dr. M. T. GAFFNEY.—District Lines: Railroad Place, Market Street, Lincoln Park, Spruce Street, High Street, Court Street, Washington Street, Market Street, High Street, Central Avenue, Fulton Street and Passaic River.

5th DISTRICT.—Dr. M. LOUISE LEFORT.—District Lines: High Street, Warren Street, Newark Street, Richmond Street, Rankin Street, Charlton Street, Spruce Street, High Street, Court Street, Washington Street and Market Street.

6th DISTRICT.—Dr. F. WEBNER.—District Lines: Charlton Street, Springfield Avenue, Fifteenth Avenue, City Line, Lyons Avenue, Clinton Place, Hawthorne Avenue, Ridgewood Avenue, Livingston Street, Eighteenth Avenue and Spruce Street.

7th DISTRICT.—Dr. V. NAGER.—District Lines: Fifteenth Avenue, Springfield Avenue, Rankin Street, Richmond Street, Newark Street, Warren Street, Central Avenue and City Line.

8th DISTRICT — Dr. W. GAUCH.—District Lines: High Street, Eighth Avenue, Clifton Avenue, Norfolk Street, Central Avenue, Hudson Street and Warren Street.

9th DISTRICT.—Dr. C. W. TITUS.—District Lines: Central Avenue, Warren Street, Hudson Street, Central Avenue, Norfolk Street, Clifton Avenue, Bloomfield Avenue and City Line.

10th DISTRICT — Dr. H. M. HART.—District Lines: Fulton Street, Central Avenue, High Street, Eighth Avenue, Clifton Avenue, Bloomfield Avenue, City Line and Passaic River.

11th DISTRICT — Dr. F. W. HAGNEY.—District Lines: Avenue D, Pacific Street, Tichenor Street, Lincoln Park, Spruce Street, Eighteenth Avenue, Livingston Street, Ridgewood Avenue and City Line.

ANNUAL REPORT

OF THE

HEALTH OFFICER

FOR THE YEAR 1898.

ANNUAL REPORT

OF THE

HEALTH OFFICER

FOR THE YEAR 1898.

To the Honorable, the Board of Health of the City of Newark, New Jersey:

GENTLEMEN.—I have the honor to herewith present to you my report of the workings of the various divisions of the Department of Public Health, together with a report of the Superintendent of the Bureau of Contagious Diseases, Bacteriologist and Chemist of the Board, for the year ending December 31st, 1898.

As to the urgent needs of the Department for carrying on its work in an efficient and scientific manner I most respectfully refer you to my report of 1897.

These needs are as urgent to-day as then, and to go into detail would seem to me to be a repetition of that with which you all are only too familiar.

Some action, however, should be taken by your Honorable Body in reference to the constantly increasing smoke nuisance, the separation and disposal of garbage, the barking of dogs, crowing of cocks, kicking of horses and all unnecessary noises, which are detrimental to public health

I would suggest that a proper ordinance regulating the same be draughted.

VITAL STATISTICS.

BIRTHS.

The total number of births reported during the year was 5,188 Of this number 5,097 were white and 91 colored ; 2,664 were male and 2,465 female, and the sex of 59 was not stated ; 5,120 were legitimate and 68 illegitimate

The birth rate per thousand on an estimated population of 235,000 is 22 07, and exceeds the death rate for the year 3 27. (See Table I.)

There were 287 still-births, or 1 22 per thousand of the population.

MARRIAGES

There were recorded 2,065 marriages This represents a rate of 8.78 per thousand, which must be considered below the actual rate. Neglect on the part of those whose duty it is to report these facts is the cause (See Table II)

DEATHS.

There were reported during the year 4,303 deaths, which represents a death rate of 18 30 per thousand of the population Of these 2,919 were native born and 1,345 foreign born and in 39 cases the nativity was not stated (See Table III.)

The social state of decedents was as follows:

Married	2,269
Single	1,319
Widows	431
Widowers	223
Not stated	61
Total	4,303

Seven hundred and seventy-three deaths occurred in institutions. (See Table IV)

SANITARY DIVISION.

The work of this division is performed by fifteen inspectors, appointed by the Board, each having a separate district under his supervision, for which he is held responsible.

In performing these duties, I wish to state that their work for the year has been done in a painstaking and creditable manner

CONSOLIDATED REPORT OF NUISANCES FOR THE YEAR ENDING DECEMBER 31, 1898.

Inspections from complaint book	2,038
" " " " verified	1,727
" " " " no cause	311
Number of original inspections made	12,066
Total number of inspections made	14,104
Number of written notices served	2,308
Total number of abatements	2,528
Number of verbal notices given	3,942
Number of abatements from same	3,202
Hours in court	112

DETAILED REPORT

Wells inspected	64
" closed	10
Sewer connections ordered	417
" drains inspected	1,385
Cess-pools inspected	513
Alleys inspected	570
" filthy	93
" need repairing	71
Streets need cleaning	347
Areas dirty	345
Cellars dirty	605
Ashes accumulation	421
Garbage accumulation	368
Drainage surface	48

Lots filthy	141
Lots stagnant water	93
Manure accumulation	457
Defective water pipes	168
Houses filthy	69
" unfit for habitation	4
Slaughter houses inspected	21
Houses unprovided with privy vault or water-closet	15
" with no water supply	42
Roofs defective	34
Hydrants defective	106
Privy houses filthy	523
" vaults full	931
Cess-pools full	329
Privy houses dilapidated	74
" vaults ordered reconstructed	11
" vaults ordered out	1 292
Yards inspected	14 164
" filthy	976
Plumbing defective	683
Water-closets defective	459
Stables inspected	924
Re-inspections	7,387
Total number of nuisances found	8,890
House to house inspections	316
Permits granted to clean privy vaults and cess-pools	955
Privy vaults cleaned	855
Cess-pools cleaned	100

PLUMBING DIVISON.

This division is under the supervision of three practical plumbers, and the work performed by them has been satisfactorily demonstrated

The following is a summary of the work of this division for the year 1898 :

Plans approved	New buildings	681
	Old buildings	356
	Total	1,037

Plans rejected		127
Water tests made	Passed	2,401
	Not passed	94
	Total	2,495
Plumbing inspections made	New buildings	948
	Old buildings	
	Total	1 625
Final plumbing inspections made	New buildings	963
	Old buildings	587
	Total	1,570
Peppermint tests made	Passed	80
	Not passed	24
	Total	104

MEAT AND LIVE STOCK DIVISION.

This division is under the supervision of two inspectors; one a veterinarian, whose duty it is to look after the slaughter-houses and wholesale meat depots; the other an experienced butcher, whose duty it is to visit all the public and private meat and vegetable markets.

The following is a summary of the work of this division for the year 1898:

SLAUGHTER-HOUSE AND LIVE STOCK INSPECTIONS.

Cattle	12 003
Calves	16,619
Sheep	18,849
Swine	7,268
Total	54,739

CONDEMNED.

Horses (Glanders)	4
Calves	12
Cows	3
Carcasses of beef	1

BUTCHER-SHOPS VISITED.

Number of	visits	8,908
"	" carcasses of beef inspected	32,321
"	" lambs and sheep	96,267
"	" calves	11,181
"	" swine	13,093

CONDEMNED.

Bob calves	8
Pork (lbs.)	250
Turkeys, ducks and chickens (bbls.)	3½
Fish (bbls.)	1
" (lbs)	300
Oysters (bbls.)	6
Beef (bbls.)	1
" (lbs.)	55
Chickens	20
Bob veal, hindquarter	1

In addition to the above Centre Market has been visited daily and numerous complaints of citizens investigated and adjusted

MILK INSPECTOR'S REPORT

The report of the Milk Inspector, together with the number of cow-stables inspected and animals licensed, for the year is as follows :

Number of	milk wagons halted for inspection	1,938
"	" cans of milk inspected	4,108
"	" lactometer tests made	2,017
"	" stores visited	2,252
"	" cans of milk inspected	2,194
"	" lactometer tests made	1,398
"	" samples found suspicious and sent to chemist for analysis	178
"	" cow-stables visited	228
"	" animal permits issued	323
"	" animals licensed	988

DISINFECTING CORPS.

This division consists of a chief and four inspectors detailed for that purpose.

The work of this division is all that can be desired under the existing conditions.

The following is a summary of the work performed during the year 1898.

REPORTED.

Diphtheria	1,019
Scarlet Fever	478
Typhoid Fever	179

DISINFECTED.

Diphtheria	938
Scarlet Fever	426
Phthisis	530
Special	94
Total number of houses disinfected	1,988
Number of rooms disinfected	4,669
" " visits made by the corps	1,572
" " nuisances reported	254
" " contagious disease funerals supervised	46

THE CITY DISPENSARY AND OUT DOOR POOR DIVISION.

During the year 27,019 patients were treated and 35,827 prescriptions dispensed.

The following is a detailed statement of the services rendered by the different clinics, together with the treatment of what is known as the Out-door Poor Contingent ·

PATIENTS TREATED AT THE CLINICS

Medical	10,016
Surgical	2,513

Diseases of	skin	1,720
"	" children	1,675
"	" women	773
"	" genito-urinary organs	1,827
Number of	teeth extracted	1,333
"	" vaccinations	7,325
"	" clinic prescriptions	23 629

NUMBER OF DISTRICT PRESCRIPTIONS DISPENSED AS FOLLOWS

1st	District	1,271
2d	"	1,080
3d	"	899
4th	"	1,487
5th	"	1,874
6th	"	739
7th	"	749
8th	"	888
9th	"	927
10th	"	1,668
11th	"	865
	Total number of district prescriptions	12,457

RECAPITULATION.

Total number of	patients treated	27,019
" "	" prescriptions dispensed	36,086

SUMMARY OF SERVICES RENDERED BY DISTRICT PHYSICIANS.

	1st Dist.—Dr. W. Gauch —6¼ months.	1st Dist.—Dr W. H. Schopfer.—6¼ months.	2d Dist.—Dr. H. W. Long.	3d Dist.—Dr. W. M. Goodwin.	4th Dist.—Dr. O. H. Roth.—11¼ months.	4th Dist —Dr. M T. Gaffney —¼ months	5th Dist.—Dr. J. A. Hoffmann 6¼ months.	5th Dist —Dr. M. L. Lefort.—6¼ months.	6th Dist —Dr. F. Webner.	7th Dist —Dr. V Nager.	8th Dist.—Dr. E Staehlin.- 6¼ months.	8th Dist —Dr. W. Gauch —6¼ months.	9th Dist.—Dr. T. P Edwards.—6¼ months	9th Dist.—Dr. C. W. Titus.—6¼ months.	10th Dist —Dr. H. M. Hart.	11th Dist.—Dr. F W. Hagney.
ctual No. of houses visited.	148	240	482	381	476	30	253	292	355	379	278	152	141	234	364	392
ctual No. of families visited	148	259	511	386	420	37	302	311	369	399	283	172	150	252	394	422
lo. of sick prescribed for.....	148	293	549	404	475	42	339	357	383	439	297	173	202	275	452	432
lo. of sick found treated by other physicians..... ...	....	11	6	..	39	4	1,	6	38	4	3	....	22	24	16	5
otal No. of re-visits made	356	1016	885	966	589	162	591	767	708	688	485	366	289	615	656	881
lo. of patients sent to hospital.....	3	18	32	33	41	2	14	17	15	37	8	2	8	2	47	8
lo. of deaths.....	1	11	15	13	11	1	11	10	1	12	5	3	6	3	8	4
lo. of circulars distributed on infant feeding...		1	4	5	....	.....	.....	20	13	4	..	6	6	35	25	18

RECAPITULATION.

	Actual No. of houses visited.	Actual No. of families visited	Sick prescribed for.	Found treated by other physicians	Total No of re-visits made	No. of patients sent to hospital	No. of deaths.	No of circulars distributed.
1st District..	388	407	411	11	1372	21	22	1
2d "	482	511	549	6	885	32	15	4
3d "	381	386	404	.	966	33	13	5
4th "	506	457	512	43	751	43	12	
5th "	545	613	706	7	1358	31	21	20
6th .	355	369	383	38	708	15	1	13
7th .	379	399	439	4	688	37	12	4
8th " ..	430	445	479	3	851	10	8	6
9th " ..	375	402	477	46	904	10	9	41
10th "	364	394	452	16	656	47	8	25
11th "	332	422	432	5	881	8	4	18
Total	4597	4805	5235	179	10020	287	125	137

A financial statement of the receipts and disbursements of the Board, showing the costs and maintenance of the various divisions of the department under its control, together with the reports of the Superintendent of the Bureau of Contagious Diseases, Bacteriologist and Chemist of the Board, is appended.

In conclusion, permit me to express my sincere thanks to you, the members of the Board, individually, for the uniform courtesy extended to me, as your executive officer, and for the able support afforded me in carrying on the work of the department

I also desire to thank the heads of the different divisions and the employees in their charge for the work performed by them during the year.

Yours respectfully,

DAVID D. CHANDLER,

Health Officer.

FINANCIAL STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1898.

RECEIPTS.

Balance on hand January 1, 1898	$ 63 67	
Special appropriation by Common Council	5,000 00	
Appropriated by Common Council (Tax Ordinance)	10,000 00	
Transferred by Common Council from Contingent Fund	35,000 00	
Fines Collected (Board of Health cases)	546 96	
		$50,610 63

OFFICE RECEIPTS

Filing Plans (Plumbing Division)	$ 2,074 00	
Scavenger Permits (Sanitary Division)	95 50	
Scavenger Licenses	160 00	
Animal Permits	117 70	
Chicken Slaughter-house Permits (Sanitary Division)	3 00	
Sale of Vaccine (City Dispensary)	10 60	
		$2,460 80

BACTERIOLOGICAL DIVISION.

Bacteriological examinations	$ 19 50	
105 Vials of A T., $1.00 per vial	105 00	
184 " " " " " less 10%	165 60	
48 " " " " " 20%	38 40	328 50
Total		$53,399 93

DISBURSEMENTS—SALARIES.

Sanitary Division	$ 27,432 64	
Bacteriological Division	3,781 68	
Dispensary	2,730 00	
District Physicians	4,472 93	
Orderly (Isolation Hospital)	576 00	
		$38,993 25

SUPPLIES.

Sanitary Division	$ 4,250 18	
Bacteriological Division	2,200 40	
Dispensary	3,900 58	
Disinfecting Corps	634 65	
Isolation Hospital	138 34	11,124 15
Total		$50 117 40

RECAPULATION.

Receipts (all sources)	$53 399 93
Disbursements	50,117 40
Balance on hand January 1st, 1899	$3,282 53

REPORT OF

BUREAU CONTAGIOUS DISEASES.

To David D. Chandler, Health Officer:

DEAR SIR — I have the honor to present the following report for your consideration embracing the contagious diseases, vital statistics and mortality under your charge for the year 1898:

(1.) DEATH RATE.

This rate for 1898 is fixed at 18.30 per thousand on an estimated population of 235,000. The total number of deaths was 4,303. The rate shows a slight increase over that of 1897, which was 17.43 per thousand.

TABLE I.

YEAR.	POPULATION.	DEATHS.	DEATH RATE.
1894	203 923	4,523	22.28
1895	215,725	4,616	21 37
1896	225 000	4,716	20 96
1897	230,000	4.010	17.43
1898	235,000	4,303	18.30

(2.) CONTAGIOUS DISEASES.

(1.) SCARLET FEVER. — During 1898 there was reported 478 cases with only 15 deaths. This is a decrease of 880 cases from 1897. It will be noted that the mortality is very light.

TABLE II.—Scarlet Fever.

YEAR.	CASES.	DEATHS.
1894	1,145	69
1895	623	35
1896	537	17
1897	1,358	54
1898	478	15

(2.) Typhoid Fever: There was reported 179 cases with a mortality of 41, barely 23%. This shows an increase over 1897, when there was reported 103 cases and 33 deaths. The cases in 1898 occurred for the most part in the five months from July 1, 1898, to December 1, 1898. Such a general increase points clearly to a general cause, affecting the health of citizens generally, and the majority of outbreaks can be traced to contaminated fluids. The evidence is that the Pequannock water supply was below standard quality. The new water supply dates from April, 1892.

Our table will show a great difference in typhoid fever beginning at this date.

TABLE III.—Typhoid Fever.

YEAR.	CASES.	DEATHS.
1891	876	186
1892	226	81
1893	125	42
1894	89	34
1895	149	50
1896	106	47
1897	103	33
1898	179	41

(3.) Small-Pox: There are no recorded cases for 1898. The evidence that there is an increasing number of unvaccinated persons and a too great reliance on old vaccinations is too strong to be resisted. These are the conditions which favor and continue an outbreak. Our

whole system of school vaccinations needs revision. The practice of waiting till school age to vaccinate children will weigh heavily against their chances, should there be any general epidemic, which can be reasonably expected at any time when the total unvaccinated persons reaches 5,000.

TABLE IV.—Small-Pox

YEAR.	CASES.	DEATHS.
1894	131	18
1895	13	2
1896	0	0
1897	0	0
1898	0	0

(4) Diphtheria: During 1898 we find reported 1,019 cases and 133 deaths. These cases are better reported and the mortality compares most favorably with any year previous to the general use of anti toxine, which is now very generally accepted by the medical profession Its use early in the case cannot be too strongly urged In 1895 our bacteriological laboratory was established, an examination of diphtheria cultures instituted and a diphtheria anti-toxine offered freely to the physicians of Newark Prior to 1895 the general mortality in diphtheria was about 35 per cent, on a clinical diagnosis hospital mortality reached 45 per cent. The results are shown in two tables, giving the cases where Newark anti-toxine was used and also where it was not used.

TABLE V.—Diphtheria (Anti-toxine used).

1895	384 cases	52 deaths	13 %
1896	905 "	106 "	11 %
1897	563 "	61 "	11 %
1898	646 "	68 "	10½%
Total...	2,498	287	11 %

TABLE VI · DIPHTHERIA (Anti toxine *not* used)

1895	937 cases	221 deaths	23 %
1896	356 "	112 "	31 %
1897	406 "	76 "	19 %
1898 ...	373 "	65 "	17½%
Total.....	2,072	474	$22\frac{9}{10}$%

Total cases, 4,570 ; deaths, 761 ; $16\frac{85}{100}$ per cent.

Our evidence is that the general mortality from diphtheria in four years has fallen from 35 per cent. to 16⅔ per cent , the mortality being *twice* as great in cases where antitoxine is *not used.*

(5) CONSUMPTION : These cases are not reportable, yet fumigation is more practiced. Our deaths for 1898, number 611. This represents a mortality of 2 per cent. per thousand ; bad sanitary surroundings and habits, and a lowered vitality favor this disease. There is a growing feeling for the establishment of sanitariums under State supervision to deal with this disease in its early stages We look along the line of

PREVENTION

1. Extend the expectoration ordinances and also guard the disposal of sputa.

2. Registration of cases and disinfection.

3. Sterilization of the regular milk supply, especially for children.

4 Testing of all herds of cattle by the tuberculin test

5. The exclusion of consumptives from the ordinary hospitals and the open air treatment of the same.

(6.) INFLUENZA.

About the middle of December, 1898, appeared a number of cases of catarrhal fever—they were fairly well marked in type—generally of short duration and favorable prognosis.

THREE CLASSES may be described .

1 Those having muscular pains, neuralgia and prostration.

2. Those having mild fever, tonsillitis and pharynatis

3 Those having bronchitis, emesis and a greater prostration.

(7.) VITAL STATISTICS.

These properly belong to the Board of Health—births, deaths and marriages all should be properly registered and full lists kept of all physicians, midwives and undertakers. A more general registration of these bodies is advocated Again, the classification of diseases needs constant revision to keep pace with the growing advance in knowledge The Bertillon system is at present the most satisfactory,

MARRIAGES.		DEATHS.	
White	2,026	White	4,179
Colored	39	Colored	124
Total	2,065	Total	4,303

Died in Institutions, 864.

BIRTHS.		STILL-BIRTHS.	
White	5,097	White	278
Colored	91	Colored	7
		Not stated	2
Total	5,188	Total	287

Classification of some Chief Causes of Death, 1898.

Pneumonia	370	Hydrocephalus	10
Heart Disease	366	Brights Disease	40
Violence	203	Dysentery	151
Apoplexy	250	Septicæmia	43
Cholera Infantum	299	Croup	1
Cancer	131	Alcoholism	11
Bronchitis	141	Whooping Cough	44
Meningitis	165	Consumption	411
Marasmus and Inanition	202	Diphtheria	133
Nephritis	191	Typhoid Fever	41
Old Age	72	Scarlet Fever	15
Cerebro-spinal Meningitis	11	Other Diseases	678
Premature Birth	124		
		Total	4,303

For 1898—Rate per thousand, 18.30.

GENERAL HEALTH

Experience confirms the belief that certain things are urgently needed for the improvement of the general health of this city.

1. A municipal fever hospital.
2. A complete sterilizing plant.
3. Emergency quarters and ambulance service.

Respectfully submitted,

EDWARD E. WORL, M. D.,

Supt. Bureau Contagious Diseases.

INFECTIOUS DISEASES REPORTED BY WARDS.

Wards	Diphtheria, including Membranous Croup	Scarlet Fever	Typhoid Fever	Small-pox
1	43	17	11	None
2	63	24	12	"
3	133	95	15	"
4	34	8	4	"
5	54	9	19	"
6	68	31	7	"
7	84	19	5	"
8	35	20	6	"
9	41	27	3	"
10	55	24	16	"
11	96	23	13	"
12	55	31	27	"
13	83	65	12	"
14	94	67	23	"
15	81	18	4	"
Total	1,019	478	179	None

Report of the Bacteriological Division.

To David D. Chandler, Health Officer:

DEAR SIR: Herewith is respectfully submitted the fourth annual report of the bacteriological division for the year ending December 31st, 1898.

The work of this division has been pursued along the same lines as heretofore. Frequent examinations have been made of the Pequannock watershed from various points to determine the sources of pollution in the city water supply.

The medical profession of Newark continues to freely use the laboratory for the diagnosis of diphtheria, tuberculosis and typhoid fever, and in the use of the diphtheria anti-toxine produced by the Board.

That the work of this division of the department is constantly increasing, is a source of gratification.

After four years' experience with the anti toxine produced by the Board of Health of Newark, its use is becoming more general every year, and the results justify the early opinion formed of this very valuable remedy.

The extent to which the anti-toxine is used in Newark and the results obtained by its use are best shown by comparisons, and the following table, which has been prepared from the official records for the last four years:

DIPHTHERIA CASES.

ANTI-TOXINE USED.			ANTI-TOXINE NOT USED		
Cases.	Deaths	Per Cent.	Cases.	Deaths.	Per Cent
1895 -384	52	13	1895—937	221	23
1896—905	106	12	1896—356	112	31 4
1897—563	61	11	1897—406	76	18.71
1898—646	68	10.5	1898—373	65	17.42

It will be noticed that the mortality is persistently higher when anti-toxine is not used, and though the severer cases are usually the ones selected for the application of the remedy, yet we find a striking reduction in percentage of deaths after its use.

The following table has been prepared to show the routine work of this division from month to month during the year, and serves to show the monthly variations in the different diseases which come under our notice :

	Jan	Feb	Mar	May	April	June	July.	Aug	Sept	Oct	Nov	Dec	Total
Diphtheria Examinations.													
Primary cultures	150	111	110	84	98	84	92	49	88	140	181	145	1,338
True cases	63	66	57	40	50	50	61	28	47	93	102	63	725
Primary and secondary cultures	239	233	188	161	179	169	185	99	133	267	368	252	2 476
Diphtheria Anti-toxine													
No. of vials produced	164	170	263	156		160	218	..	201	168	584		2 120
" " used by physicians	173	153	94	93	124	82	74	80	101	171	197	179	1 521
Tuberculosis Examinations													
Positive	37	14	27	18	28	28	29	25	23	30	21	32	312
Negative	36	17	40	38	32	23	24	29	36	32	27	44	378
Typhoid Blood Examinations.													
Positive	3	1	..	1	1	1	4	24	22	10	8	6	80
Negative	7	12	13	8	8	5	2	37	32	40	30	17	211
Suspicious	2	2	..	.	2	2	..	1	3	2	2	3	19

Together with the above there has been made during the year 51 examinations of drinking water ; 7 samples of carbonated water, *i. e.*, soda water, sarsaparilla and ginger ale ; 7 samples of Passaic River sand.

To David D. Chandler, Health Officer, Newark N J.:

DEAR SIR: I herewith submit my annual report for the year ending December 31st, 1898.

The character and scope of the chemical work has not differed materially from that of previous years, but a larger number of analyses have been made.

MILK.

The plan of taking samples of milk promiscuously is still pursued and works well. The number of samples taken in this way was one hundred and seventy-eight (178). The average percentage of total solids of all these, good and bad, is 12.82 per cent, almost the same as the average for last year (12.87).

For purposes of comparison it was thought best to arrange the figures for total solids in tabular form, the same as before, and the same plan of division has been adopted:

1st. Those above 12.50 per cent.

2nd. Those between 12 per cent. and 12.50 per cent.

3rd. Those below 12 per cent.

CLASSIFIED TABLE OF MILK ANALYSES

Samples having a percentage of total solids above 12.30.
Average, 13 236.

13.33	13.11	12.64	13.19	13.47	13.01	15.84	12.68	13.03	13.32
13 35	13.96	13.02	13.64	12.50	12.54	13.32	12.87	13.63	14.03
12.59	15.56	13.71	12.52	13 18	13.05	12.76	13.49	14.34	14.26
12 71	13 40	12 63	13.14	13.65	12.80	12 75	13.34	13 20	12 69
12.80	12 63	12.98	13.83	13 70	12 82	13.50	13 26	13.81	13.17
13.07	13.06	12 86	13.16	14.77	12 72	13.03	13.46	14.11	13.34
12.60	12.60	12 61	13.90	13 56	12 62	13 00	13.45	13.42	13 06
14.16	13.07	12.74	13 24	13.44	12.64	13.36	13.28	13 23	13.96
13.80	12 56	13 19	12 84	13 21	13.18	12.67	13 12	12.79	13.56
12 67	12.74	14 57	12.69	12 70	12.87	12 94	13.21	12.87	13.15
12 57	14 02	12 94	14 05	13 30	13.08	13.16	13 28	12.74	12.93
13.29	13.38	12.73	13.24	13.24	13.66	13 90	12 95	13.62	14.03
13.23	12.61	12.60	13.23	13.13					

Samples having a percentage of total solids between 12 and 12.50.
Average, 12 36.

12.43	12.24	12 40	12.05	12 23	12.43	12.41	12.40	12.10
12.43	12.42	12 49	12.19	12.44	12.41	12.23	12.36	
12.34	12 48	12.42	12.47	12.41	12.23	12.48	12.39	

Samples having a percentage of total solids below 12.
Average, 11.58.

11.96	11.70	11 79	11.94	11.75	11.38	10.67	11 66	10.38	11.93
11.59	11.59	11.46	11.90	11.89	11.43	11.78	11.59	10.89	
11.78	11.76	11.79	10.89	11.96	11.54	11.76	11.60	11.89	

By reference to the above table it will be seen that, as in 1897, a large proportion of the samples fall in the first class, the number and per cent of total solids being almost identical for the two years. The percentage number of those in the third class (below the standard), however, is greater this year than before. The relative figures can be quickly compared in the following short table.

	Percentage in first class (over 12 50 % of total solids).		Percentage in second class (between 12 % and 12.50 % of total solids).		Percentage in third class (less than 12 % of total solids)	
	1897	1898	1897	1898	1897	1898
	69.12	70.22	21.32	14.15	9.56	15.73
Average percentage of tota solids.	13.24	13.236	12.23	12.35	11.61	11.58

CITY WATER.

Monthly analyses of the city aqueduct water have been made as heretofore, and these, together with several other samples taken from various parts of the city, are placed in the annexed table.

A comparison of averages with last year shows the water to be almost identical in most respects. What little difference there is, is in favor of 1897, except in the color, which has been better, generally, in 1898.

The color, taste and odor of water are the properties on which the public base their opinion of its quality These would all be much improved if the entire city supply was filtered. Although the quality of the water as a public supply is good, filtering would wonderfully improve its appearance and minimize the danger of disease germs from the watershed.

ANALYSES OF NEWARK AQUEDUCT WATER.

(PART PER 100,000.)

Date 1898	Free Am'onia	Albuminoid Am'onia	Chlorine	Nitrogen as Nitrites	Nitrogen as Nitrates	Loss on Ignition	Fixed Mineral Matter	Total Solids	Color	Temperature For
January 21.	.0017	.0080	.16	None	.0150	1 50	3 25	4.75	35	41
February 21...	.0020	.0135	.15	"	.0140	2.25	1 40	3.65	46	40½
March 23 ..	0015	0126	12	"	.0200	1 90	3 45	1 35	33	50
April 6	0030	0120	20	"	.0095	2 00	2 15	4 15	33	45½
" 20. .	.0008	.0130	.15	"	0130	2 40	2 00	4 40	30	54
May 21	0014	0140	13	"	0070	1.15	2 35	3 50	32	62
June 22	0070	0150	12	"	.0100	2 25	2 60	4 85	32	....
" 20	0016	0108	.10		0090	1 50	2 05	3 0	.30	65
July 21.... ..	.0026	.0140	.12	"	.0140	1.70	3.10	4 80	30	73
" 25	.0020	.0175	.10	"	.0160	1.50	3.10	4 60	40	...
" 25 ...	.0025	.0146	.10	"	.0150	2 50	2.50	5 00	.37	
" 25 . .	.0026	.0150	.12	"	.0150	2.50	2.50	5.00	.36	.
" 25	0034	.0214	.10	Trace	.0160	2.65	2 45	5.10	38	...
August 19	.0035	0190	.12	"	0150	2 50	2 65	5 15	38	73
September 21	0020	.0142	.15	None	.0160	2.00	2 40	4 40	.25	68½
October 25 ...	0014	0142	16	Trace	0080	2 00	1 15	3 15	.18	55
" 17. ...	0008	0140	.20	"	.0080	2 25	1 00	3 25	.	....
November 21	0054	.0175	.16	"	0100	2.75	2 85	5 60	60	45½
December 20	0050	.0132	.25	None	.0150	1 65	3 10	4 75	.34	37
Average	0026	.015	142	Trace	0130	2 05	2 37	4 42	348	....

WELL WATER.

There are still a number of wells in use in the city and water from forty-seven of these was analyzed during the year. Of these thirty-three were marked "contaminated," twelve "suspicious" and two "passable."

The lessons of experience relative to well water and disease should be conclusive enough to condemn the city well as a source of drinking water without regard to the results of analysis.

MISCELLANEOUS ANALYSES.

There were ten special samples of water analyzed not included under the head of City and Well water. Two samples of vinegar, some sewage effluent, a sample of preservative, one of candy and one of condensed milk were also examined. A piece of cheese was examined for tyrotoxicon with negative results. Some explosive paste used in the preparation of paper caps for detonating toys and which had poisonous effects on some of the employees working in it, was analyzed and found to be fulminate of silver. About two pounds of sugar brought to the Health Office by a man who was suspicious of it, owing to the manner in which he received it, was examined and found to contain a large quantity of arsenic (about 4 per cent).

Seven samples of cheap soda water were examined. It was found that cane sugar is generally used as a sweetening agent. In one sample, however, a mixture of glucose and saccharin had been employed. In different makes of lemon soda, phosphoric, citric and tartaric acids were found, tartaric being the one most generally used. More detailed information will be found in the reports made at the time.

Very respectfully,

HERBERT B. BALDWIN,
Chemist.

[Table No. I.]

BIRTHS REPORTED DURING THE YEAR 1898

Color.		Sex			Nativity of Parents.									Name of Child		Legitimacy		
							Foreign Father only.	Foreign Mother only.	Nativity of Father only Stated.		Nativity of Mother only Stated.							
White.	Colored.	Male	Female.	Not Stated.	Native.	Foreign.			Native.	Foreign.	Native.	Foreign	Not Stated	Stated.	Not Stated.	Legitimate.	Illegitimate	Total
5097	91	2664	2465	59	2030	22[illegible]	453	322	7	5	36	30	15	4163	1025	5120	68	5188

STILL-BIRTHS REPORTED.

Sex.			Father			Mother.			Color			
Male	Female	Not Stated.	Native	Foreign.	Not Stated	Native	Foreign	Not Stated	White	Colored	Not Stated.	Total
167	96	24	127	140	14	138	14	9	275	7	2	287

[Table No. II.]

MARRIAGE REPORTS.

Nativity.																				
White		Colored		Native.		Foreign.		Not Stated.		First Marriage		Second Marriage.		Third Marriage.		Fourth Marriage		Not Stated		
Male.	Female.	Male	Female	Male	Female	Male	Female	Male	Female.	Male.	Female.	Male.	Female	Male	Female.	Male	Female.	Male.	Female.	Total
2026	2027	39	38	1155	1185	907	868	3	12	1624	1677	214	193	15	8	4	4	208	183	2065

[Table No. III.]

NATIVITY OF DECEDENTS

United States	2,919
Germany	582
Ireland	445
England	94
Italy	83
Russia	31
Scotland	27
Austria	19
Hungary	14
Poland	14
France	12
Sweden	7
Switzerland	7
Denmark	3
Wales	3
Canada	1
Spain	1
Turkey	1
China	1
Not stated	39
Total	4,303

[Table No. IV.]

DEATHS IN INSTITUTIONS AND PUBLIC PLACES.

St. Michael's Hospital	288
City Hospital	177
St. Barnabas' Hospital	74
Essex County Hospital for Insane	51
German Hospital	49
Babies' Hospital	42
Alms House	37
Little Sisters of the Poor	31
Essex County Jail	4
Police Ambulance	4
Palace Hotel	3
Home for the Incurables	3
Home for Aged Women	2
House of the Good Shepherd	2
Monastery of St Dominic	1
Newark Orphan Asylum	1
Essex Troop Armory	1
Home for the Aged	1
Second Presbyterian Church	1
Women's Hospital	1
Total	773

WELLS RECORDED.

Location of Well	Sample No	Kind and Depth	For Manufact'g or Domestic Purposes.	Privy Vaults and Cesspools Within 30 Feet	50 Feet	100 Feet	Result of Analysis
W Kinney St 45 47 ,	675	Driven 65	Domestic	1 P V			Contaminated
Warren St , 503.	676	Bucket 44'	"	1 P. V.	....	....	Very suspicious.
Congress St., 22	677	Pump . .	"		1 C P.	1 P. V.	Contaminated.
W Kinney St., 183	678	Pump 38'	"				Passable
Congress St , 24-26.....	679	.....	"	1 C. P	....	1 P. V.	Very suspicious
W Kinney St , 181.....	680	Pump ...	"	....	....	....	Very suspicious.
Jelliff Ave , 213-215	681	Bucket 30	"		1 P V		Very badly contaminated.
Adams St 157	682	Pump .	"	1 P V 1 C P	...		Contaminated
Osborne Terrace,	683	Cistern Pump 16	"		..	1 P. V	Contaminated
Kossuth St , 161 ..	684	Pump .	"	...	.	P. V	Badly contaminated.
Summer Ave , 770	685	Bucket 48'	"	....	....	1 P. V.	Suspicious
Bloomfield Ave., 66.....	686	Pump	"	....	....	...	Contaminated.
Pennington St., 143....	687	Pump 20'	"	2 P. V.	....	...	Contaminated.
Pennington St , 149. ...	688	Pump 20	"	2 P. V.	....	. ..	Badly contaminated.
Passaic Ave , 179.	689	Driven 275'	"	1 P. V.	....	1 P. V.	Passable
Tichenor St., 116	690	Pump 35	"	1 C P		.	Very badly contaminated.
Chambers St 34 . ..	691	Pump . .	"	1 P.V 1 C P	..	1 P V	Contaminated.
New St , 404	692	Bucket ..	"	....	1 P V	..	Badly contaminated
Fifth St., 468....	693	Pump 25'	"	....	1 P. V.	....	Contaminated

Washington St., 185–187.	694		Driven	235'	Domestic	....	....	....	Contaminated.
Elm Road, 114.....	695		Bucket	16'	"	....	1 P. V.	1 P. V.	Contaminated.
Plane St. 396.....	696		Driven	61'	"	....	....	....	Contaminated.
N. J. R. R. Ave,, 233....	697		Artesian	100'	"	....	....	....	Badly contaminated.
Pierce St., 81	698		Bucket	45'	"	....	....	1 P. V.	Suspicious.
Springfield Ave., 616....	699		Bucket	25'	"	....	....	1 P. V.	Contaminated.
Pierce St., 31.....	700		Bucket	28'	"	1 P. V.	....	....	Badly contaminated.
Pierce St., 37	701		Bucket	35'	"	1 P. V.	....	....	Contaminated.
Runyon Ave., —	702		Bucket	25'	"	1 P. V.	....	....	Suspicious.
Runyon Ave., —	703		Cistern / Pump	7'	"	....	1 P. V.	....	Suspicious.
Lexington St , 63–65 ...	704		Artesian	405'	"	....	....	1 P. V.	Suspicious.
So 11th St., 508	705		Bucket	24'	"	1 P. V.	....	....	Contaminated.
So. 11th St., 510–512...	706		Bucket	18'	"	....	1 P. V.	....	Contaminated.
Eighth Ave., 212–214....	707		Bucket	25'	"	....	....	....	Contaminated.
William St., 114–120....	708		Driven	....	"	....	....	....	Suspicious.
Hoyt St., 46.....	709		Bucket	23'	"	2 P. V.	....	....	Very badly contaminated.
South St., 102.....	710		Bucket	17'	"	....	....	2 P. V.	Very suspicious.
Houston St., 70–72.....	711		Bucket	20'	"	2 C. P.	2 P. V.	....	Very badly contaminated.
Garrison St., 109....	712		Pump	20'	"	1 P. V.	....	1 C. P.	Very badly contaminated.
Walnut St , 412.	713		Pump	....	"	1 P.V / 1 C.P.	....	....	Contaminated.
So. 17th St., 757–763....	714		Pump	18'	"	....	1 P. V.	....	Contaminated.
Crawford St., 42	715		Pump	40'	"	....	....	....	Suspicious.
Washington St.. 478.....	716		Pump	....	"	....	....	....	Very suspicious.
Crawford St., 38.....	717		Driven	206'	"	....	....	....	Suspicious.
Shipman St., 34..... ..	364	R	Pump	....	"	1 P. V.	3 P. V.	....	Very badly contaminated.
Peshine Ave., 222–224...	444	R	Bucket	45'	"	2 C. P.	2 P. V.	....	Contaminated.
Hunterdon St., 123.....	29	R	Pump	27	"	1 P. V.	....	....	Contaminated.
N. J R. R. Ave., 247½..	366	R	Pump		"	....	1 P. V.	....	Contaminated.
Washington St., 185–187.	694	R	Driven	235'	"	....	....	....	Very suspicious.
Oxford St., 26,.....	17	R	Driven	30'	"	3 P. V.	....	....	Very suspicious.

Letter "R" indicates where wells were re-analyzed.

AREA OF CITY AND EXTENT OF PUBLIC IMPROVEMENTS.

Census population, 1890	181,830
Estimated " 1898	235,000
Total area of the City's square miles	18½
Built up portion, square miles	12½
Meadow-land, " "	6
Length of river and bay front, square miles	10.5
Number of miles of granite block	32.60
" " " trap	12 29
" " " telford pavement	11.28
" " " cobble stone pavement	14.03
" " " asphalt pavement	28.11
" " " brick pavement	3.76
Total length of paved streets	102.07
Number of miles of unpaved streets	117.56
Length of electric railways, miles	70.00
" " steam " "	28.38
" " brick sewers	58.90
" " pipe "	92 47
Total length of sewers	151.37
" number of sewer basins	2,501
Length of water mains, miles	229¼
Average daily consumption of water during the month, gallons	27.4
Capacity of water supply per day, gallons	50,000,000
Number of buildings furnished with water	32,000

PUBLIC PARKS.

Military, acres	6.45
Washington, acres	3.40
Lincoln, acres	4.37

NEW PARKS.

Branch Brook, acres	280
East side, acres	13
West side, acres	23